DRAFT NOTES:
Water Management Development Team Meeting – 11/3/99
1:00-5:00

**AGENDA:**

- **Progress Report on Scenarios**
- **Review Process**
- **Workplan Update**
- **Recommendations**
- **Summary of Actions**

**Summary of Actions**

1. Tom Zuckerman will address Delta island storage
2. CT will simplify overhead presentations
3. CT will develop a qualitative assessment of what the information means.
4. CT will address the demand/delivery issue - what are they and how do different demand/deliveries affect the model/gaming outcome.
5. CT will conduct a modeling workshop to address differences in the models and validation of each model's output.
6. Models will breakout CVP/SWP components
7. CT will address/clarify b(2) allocations.
8. CT will complete asset descriptions.
9. Progress report from CT at end of next week.
10. Meet again in two weeks.

**I. Introduction to Gaming**

**Objectives:**

- determine the effect of assets under different conditions
- determine the effect of b(2) implementation
- determine the effects on WQ, WS, and fish

**Scenario 1A:**

- Baseline - WQCP + VAMP flows
- EWA assets - b(2), E/I flexing, 100 TAF of ERP water.
- Infrastructure changes - 7100 cfs Banks capacity in summer, JPOD, and Intertie

Q: Are these achievable in early in Stage 1? R: Yes.

**Scenario 1B:**

- Same baseline
- Same EWA assets
- New infrastructure - Two in-Delta storage islands 120 TAF each (no connection to CCF), 290 TAF Shasta expansion, JPOD, and Intertie

C: These assets are controversial. R: Yes.

**II. Results of DWRSIM Runs** - George Barnes

**Assumptions:**

- 340 TAF Trinity
- Study 1 - D1485
- Study 2 - WQCP + winter run BO, VAMP flows, Vernalis flows if possible, exports of 100% of Vernalis
- Study 3 - same as #2 + 7100 Banks July-Sept + extending period of use of new pumps from Dec15-Mar15 to Nov1-Mar31 + 400 Intertie + JPOD
- Study 4 - WQCP + upstream AFRP flows + VAMP
- Study 5 - WQCP + upstream AFRP flows
- Study 6 - WQCP + some late Stage 1 assets (e.g., 10,300 Banks)

**Results:**

- WQCP costs water supply
- new facilities add some supply back
- b(2) actions reduce CVP supply
- end of Stage 1 actions (e.g. expanded Banks) recovers some water supply.

Q: Effects of WQCP on Yield? R: These were not yield studies.

C: SWP gains from b(2) actions while CVP losses water. R: Yes. SWP is allow to capture the extra outflow under the COA. (e.g. winter run releases in summer can be captured by SWP when CVP is already at capacity)

**III. Game Methods** - Dave Fullerton

- Game runs 1A, 1B 1981-1988
- b(2) asset available - subtracted federal share of WQCP from b(2)
- JPOD, COA - complicates results
- subtracted upstream AFRP to give balance of b(2) for use in Delta.
- accounted for b(2) use with DOI criteria
- shared Feb-Mar export reductions in some years with WQ (reduce TOC)
- total sharing within San Luis
- 1B replicated 1A actions
- Often we did not use all b(2) assets
- Did not use other EWA assets such as groundwater storage, E/I relaxation, efficiency

C: Need to understand the significance of each assumption and action.

Q: Were there low-point problems? R: yes - we ran out of water often. Assume some cut backs in deliveries would be initiated before that happened.

Q: What is the effect of fuzziness on results? R: Uncertainties, need time to fix some things in models.

Q: What about some of the net positive effects on b(2) - credits? R: We used the DOI accounting rules that don't allow credits.

C: Concern about gaming accuracy.

C: We need a policy framework.
C: Schedule may be too ambitious.
S: Suggest we go through and validate results of the models.
C: Confidence in model predictions is a key policy issue.

**IV. Water Quality Results - Model run 1A** - Dave Briggs

**Evaluation:**
effectiveness and tradeoffs of:
- operation actions
- treatment actions
- exchanges (wild cards)

**Comparisons:**
- targets/goals
- CUWA goals (Br, TOC, TDS)

**Results:**
- consistencies with biological benefits (e.g., reduced May-July export benefits)
- Chlorides were used as surrogate for seawater intrusion
- Chloride benefits in fall and Feb-Mar from export reductions.
- Tradeoffs with water supply
- In-Delta storage is a wild card with scenario 1B.

Q: How does TDS and TOC rate? R: Benefit derived from reduced treatment cost. Other tools can make up difference - matter of cost effectiveness.
Q: Hood connection in late Stage 1? R: Not included.
C: There is a WQ impact from b(2) actions in Scenario 1A. R: b(2) could not be modeled with DWRSIM.
Q: Impacts to CCWD at Rock Slough? R: similar chlorides as CCF.

**V. Water Supply** - Paul Fujitani

Baseline for deliveries was DWRSIM study #3 - used in Daily model to model 1A and 1B b(2) action effects on water supply.

**Results:**
- Effects observed in WQCP base, 1A, and 1B.
- tradeoffs with earlier filling and later reductions in exports
- more exports in fall and summer - less in spring
- will be looking closer at delivery levels

Q: Was water supply gained from Expanded Banks taking surplus outflow or additional storage releases? R: Both. Additional storage releases were used in summer for San Luis low-point.

**Water Costs:**

- WQCP impacts were split between SWP and CVP.
- Stanislaus b(2) actions not included in model as yet.

Q: Why didn't you bank more b(2) water in San Luis or upstream reservoirs? R: capacity and storage limited ability to bank water in San Luis. Assumed we could not bank in upstream reservoirs.
Q: What were the differences between the two models for the baseline predictions? R: We have not assessed the reasons for the differences.
Q: Are there inconsistencies in b(2) allocation and accounting between CALFED and CVPIA? R: Accounting is consistent with DOI method. Allocation may or may not be consistent.
Q: Groundwater assets were not used? R: That is right.
Q: There was no crediting of b(2) from increasing exports later in the summer? R: That is right.
Q: How valuable were the new assets in 1B? R: The Delta islands provided 240 TAF of storage capacity.

**VI. Fish**

- Tables presented with concerns, tools, and priorities.
- Charts presented with percentage of different priorities met - (e.g., in Scenario A - 20 of 28 priority A's were fully addressed)

S: Suggest adding column next to tools that shows the biological objective. Show objective >> result >> and biological significance. Need relevance to biol connection. Level of biological accountability.
Q: Why have striped bass goals? R: CVPIA and DFG by law must address striped bass.
Q: Were the priorities based on salvage numbers and indirect effects of exports? R: Yes, salvage and hydrodynamics.
Q: Why was ½ % of population impacts from salvage considered significant? Were you assuming impacts were higher than ½ %? R: Yes. Salvage was simply used as surrogate for real time monitoring.
Q: Are there two lists for b(2) actions - CALFED and CVPIA? R: Yes, but there are few disparities.
Q: Are there agreements on priorities of application? R: No present agreement; but not expecting much difference. Gaming has a broader perspective. The b(2) program is not specific as yet because they have not had real hydrology to respond as we have had in gaming. But we think we would respond similarly to specific situations.
Q: What are the biological triggers for b(2) actions? Real time monitoring? R: This is subject of Thursday's B(2) workshop. Gaming uses salvage as trigger - in reality real-time data such as that specified in the spring run protection plan will be used. For yr 2000 CVPIA is using 90 and 50 percentile forecast. Each outlook changes the priorities of actions and allocation of resources. Gaming addresses a broader range of issues.
Q: Is success based on salvage - focus on pumps? R: Yes, also flow, gate operational status.

C: There is no correlation between pumping rates and population impacts. This is not reflective of estuarine health. R: Part of b(2) game is to increase flows in rivers and Delta - for example the benefits of VAMP. Salvage is a good indicator - one of the best we have of fish health.
Q: Why didn't you use reducing take levels below red and yellow lights as targets and indicators? R: That would be less viable indicator.
Q: What did you do with PG&E take? R: not included.
Q: Was QWEST used as an action? R: No - we stayed with salvage.
Q: How was "full" or "partial" for meeting priority determined? R: qualitative judgement.
**Action**: For list of b(2) actions describe the objectives for each action.
**Action**: Develop a list of the priority concerns (e.g., 28 A's, 41 B's, etc.)

**VII. Salvage Number Evaluation of Scenarios** - Bruce Herbold

Presented tables of salvage predictions for historical, WQCP baseline, 1A, and 1B.

Q: how was delta smelt salvage adjusted for X2? R: salvage was discounted the further downstream X2 was positioned from the historical position.
Q: What was the significance to the populations from these entrainment levels? R: We don't know.
Q: There are no tools to look at salvage relative to the populations - no correlations between salvage and populations levels. No evidence on the indirect effects of salvage on salmon and smelt? R: some tools but no agreements.
C: You are dedicating should be considering water supply needs.
C: We have lost track of why we are here. To evaluate b(2) assets - show how they perform under bookends. The Bar was ESA agencies not CALFED's.
C: We should be developing Qualitative Message Points for WQ, WS, and Fish.
C: Our indicators should be health of the populations. R: Many of these indicators will be looked at.
C: Right now allocation of assets is based solely on the salvage indicator. Are there better analytical indicators? R: No.
S: Adaptive Management studies should be our focus for the future to show need before we allocate all the assets one way or the other.
C: We need to state and clarify the assumptions behind the numbers. Verify that densities would remain the same under differing exports and hydrology. Or if we decreased pumping would the fish go away. If we increased pumping would we take them all and densities decline? We need an adaptive management program to address these questions. We should conduct such a program over the next seven years before we commit a lot of water resources to reducing salvage.
R: CMARP is designed to address many of these questions.
C: The institutional design is important - we will find out whether habitat or salvage reduction gives us our biggest bang for our buck.
S: We should get qualitative decisions from the CT - they should go through all of these numbers and interpret for the DT. R: Level of detail seemed fine for some.

C: Demands used in the models seems to be important. R: Yes.
S: We need more on the assumptions behind these demands. Significance of the demands.
S: We should look at model predictions for red flags.
S: We should be comparing 1B with historic numbers and using b(2) to meet unmet needs.
S: We need a CT workshop on model differences.
S: We should split out CVP and SWP in model.
C: The big picture guidance you are giving the CT seems to be a different direction. R: CT needs to tell us about the significance and differences in opinion. This process is supposed to help. We simply want to know how well b(2) meets our objectives.
S: DT should have subgroups to address some of the issues raised by the CT. DT task is bigger than CT. We need smaller groups to be effective. We should structure agendas to address issues in a stepwise process.
Facilitator: This is a process with divergent positions - we should own each others mission/goals but we don't. We keep opening Pandora's boxes. We address too many technical issues that we are not going to resolve. Need to get through a modest policy exercise. Should suspend the outcome judgement until the end of the process.
R: We can't agree on the goals - the Bar. We haven't been able to rachet goals back for the purpose of the process.
S: Consider meeting bi-weekly.
C: Our tools are fixed, but our goals will have to adjust to the tool level. Need to concentrate on coming up with goal vectors that satisfy everyone.
C: There are too many scientific questions for us to own each others goals. We all know the pot isn't big enough.
Q: Do you try to meet everyone's goals during the game. R: Yes, we all work together to satisfy everyone.
C: We are not clear on the water users goals for water supply or for the conflict between WS and WQ.
S: We should let CT process proceed.
C: We need to get better input back to CT on specific issues.
S: We need agreements on assets, concerns, and targets for WS, WQ, and Fish.
S: We need to make assets palatable.
C: There are some questions as to what constitutes an asset.
S: We should consider b(2) a new baseline.
S: We should try different allocations of assets in 1A and 1B.
S: We should set goals and expand discussions on different ways to achieve goals.
C: We have hard and soft paths. The pumps are a hard path. Soft paths (e.g., habitat) are hard to get people to address.
C: Pumps are the most controversial part of CALFED.
S: Need a progress report by the end of next week from CT so we are up to date and informed before the next meeting in two weeks.